(a) Where the power conductor used is No. 6 A.W.G., or larger, the cross-sectional area of the grounding wire is at least one-half the cross-sectional area of the power conductor.

(b) Where the power conductor used is less than No. 6 A.W.G., the cross-sectional area of the grounding wire is equal to the cross-sectional area of the power conductor.

§ 77.701–4 Use of grounding connectors.

If ground wires are attached to grounded power conductors, separate clamps, suitable for such purpose, shall be used and installed to provide a solid connection.

§ 77.702 Protection other than grounding.

Methods other than grounding which provide no less effective protection may be permitted by the Secretary or his authorized representative. Such methods may not be used unless so approved.

§ 77.703 Grounding frames of stationary high-voltage equipment receiving power from ungrounded delta systems.

The frames of all stationary high-voltage equipment receiving power from ungrounded delta systems shall be grounded by methods approved by an authorized representative of the Secretary.

§ 77.703–1 Approved methods of grounding.

The methods of grounding stated in § 77.701–1 will be approved with respect to the grounding of frames of high-voltage equipment referred to in § 77.703.

§ 77.704 Work on high-voltage lines; deenergizing and grounding.

High-voltage lines shall be deenergized and grounded before work is performed on them, except that repairs may be permitted on energized high-voltage lines if (a) such repairs are made by a qualified person in accordance with procedures and safeguards set forth in §§ 77.704–1 through 77.704–11 of this Subpart H as applicable, and (b) the operator has tested and properly maintained the protective devices necessary in making such repairs.

§ 77.704–1 Work on high-voltage lines.

(a) No high-voltage line shall be regarded as deenergized for the purpose of performing work on it, until it has been determined by a qualified person (as provided in § 77.103) that such high-voltage line has been deenergized and grounded. Such qualified person shall by visual observation (1) determine that the disconnecting devices on the high-voltage circuit are in open position, and (2) insure that each ungrounded conductor of the high-voltage circuit upon which work is to be done is properly connected to the system grounding medium. In the case of resistance grounded or solid wye-connected systems, the neutral wire is the system grounding medium. In the case of an ungrounded power system, either the steel armor or conduit enclosing the system or a surface grounding field is a system grounding medium;

(b) No work shall be performed on any high-voltage line which is supported by any pole or structure which also supports other high-voltage lines until: (1) All lines supported on the pole or structure are deenergized and grounded in accordance with all of the provisions of this § 77.704–1 which apply to the repair of deenergized surface high-voltage lines; or (2) the provisions of §§ 77.704–2 through 77.704–10 have been complied with, with respect to all energized lines, which are supported on the pole or structure.

(c) Work may be performed on energized surface high-voltage lines only in accordance with the provisions of §§ 77.704–2 through 77.704–10, inclusive.

§ 77.704–2 Repairs to energized high-voltage lines.

An energized high-voltage line may be repaired only when:

(a) The operator has determined that,

(1) Such repairs cannot be scheduled during a period when the power circuit could be properly deenergized and grounded;

(2) Such repairs will be performed on power circuits with a phase-to-phase nominal voltage no greater than 15,000 volts;